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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,677	10/17/2006	Heather K. Kranz	58913US004	1712
32692 7590 01/19/2011 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
EXAMINER NELSON, MICHAEL B				
ART UNIT		PAPER NUMBER		
1798				
NOTIFICATION DATE		DELIVERY MODE		
01/19/2011		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com

LegalDocketing@mmm.com

Office Action Summary

Application No.

10/564,677

Applicant(s)

KRANZ ET AL.

Examiner

MICHAEL B. NELSON

Art Unit

1798

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-42 and 51-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-42 and 51-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-040)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Examiner's Note

1. As a result of applicant's most recent interview with the examiner the previous office action of 10/20/10 is considered improperly final and the current office action is being issued as a non final office action that resets the statutory time period. The office action below is the same as the previous final action except that it is being made non-final.

Response to Amendment

2. Applicant's response of 10/04/10 has been entered. As a result of applicant's arguments in the response, and more particularly the arguments expressed during the interview of 09/22/10 related to the meaning of the word "fused," prosecution has been reopened in this case. The previous 112nd rejection of claim 42 is likewise withdrawn due to applicant's arguments.

3. Applicant's request for reconsideration of the finality of the rejection of the last Office action (06/04/10) is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
7. Claims 31-35, 37-42, 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (WO 01/096104) in view Tait et al. (U.S. 2003/0219577) in view of Soodak et al. (U.S. 4,945,203).

Regarding claims 31 and 51-54, Liu et al. discloses a non-metallic polymer based optical film which achieves the instantly claimed optical properties (See Claims 14 and 20 which read on the limitations of instant claims 51 and 52). Liu et al. also discloses that delamination of the layers in the film should be avoided (first full paragraph, page 25). Liu et al. discloses a laminate with more than 100 layers which is bonded on both sides by PVB and then bonded on those both sides by glass (Example 2, Page 29-30 and Fig. 3). Liu et al. does not disclose the peripheral sealing of the multilayer film.

Tait et al. discloses that optical films are commonly produced on a larger scale than that required for the final application and then cut to a smaller size by means of a laser (Fig. 2, [0030]) which allows for quick and customizable cutting of the smaller shapes from the larger

sheet and also prevents delamination. Tait et al. does not explicitly disclose that the heat produced by the laser being absorbed by the optical film to vaporize and cut would also fuse (to at least some degree) the cut edges of films (though one having ordinary skill would expect this to occur to some degree). Soodak et al. discloses a method of cutting shapes from a master sheet of plastic material with a laser in which the laser is configured to cut and weld the edges of the cut sheets in a way that allows the depth of the welded edge to be controlled (C4, L1-15 and C7, L60-C8, L5 and C11, L40-65, disclosing that the area of the defocused welding laser beam can be controlled to be as much as 0.5 inches). Hence it would have been obvious to have used the laser cutting technique of Tait to cut the proper shapes from a larger master sheet to enable more economic production of the optical film of Liu and it would have been obvious to have used the laser configuration of Soodak to control the weld portion of the cut edges of the sheet in order to control the degree of delamination resistance in the cut article (delamination protection being called for in both Tait and Liu).

Regarding claim 32, the laser cutting methods of Tait and Soodak would only fuse the periphery and not the center portions of the film and would prevent delamination. Regarding claim 33, Liu et al. discloses a laminate with more than 100 layers which is bonded on both sides by PVB and then bonded on those both sides by glass (Example 2, Page 29-30 and Fig. 3). With respect to claim 34, Liu discloses that the PVB layers are laminated (i.e. fully bonded) to the microlayer stack (Fig. 3). Since the sheets are coextensive, the bonding of the optical film and the PVB layers is considered fully bonded. With respect to claim 35, the peripheral edges of all the layers in the glazing assembly are disclosed as being substantially coextensive (Fig. 3). With

respect to claim 37 and 40, since the bonding PVB layers do not surround the exposed edge of the optical film (Fig. 3) the optical film is not fully encapsulated by the bonding layers. With respect to claims 39, 41, 42, the laser techniques of Tait and Soodak provide for fusing (intermingling) of the layers during the welding of their edges and Soodak discloses that the depth of this weld can be controlled to up to 0.5 inches (C11, L40-65). The remaining portions would not be so fused. With respect to claim 38, the glazing of modified Liu et al. would be suitable for a vehicle window.

8. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (WO 01/096104) in view Tait et al. (U.S. 2003/0219577) in view of Soodak et al. (U.S. 4,945,203) as applied to claim 33 above, and further in view of Gourio (U.S. 6,334,382).

Regarding claim 36, modified Liu et al. discloses all of the limitations as set forth above. Liu et al. does not disclose that the optical film extend beyond the peripheral edge of the bonding layers. Gourio discloses an optical laminate in which an optical layers (3 and 2) extends past the bonding layers (9) (Fig. 2). Gourio also discloses that bonding layer 9 can be made into two separate layers on either side of the optical layer (3 and 2) by reducing the gap between portion 3 and portion 2 (C3, L25-50). The extension of the layer (i.e. portion 3) is disclosed as improving impact resistance of the glass laminate (C2, L5-20).

The inventions of both modified Liu et al. and Gourio are drawn to the field of optical laminates and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the optical film layer dimensions of modified Liu et al. by

extending the layer as taught by Gourio for the purposes of imparting improved impact resistance.

9. Claims 31-35, 37-42, 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (WO 01/096104) in view Neavin et al. (U.S. 2001/0013668) in view of Soodak et al. (U.S. 4,945,203).

Regarding claims 31 and 51-54, Liu et al. discloses a non-metallic polymer based optical film which achieves the instantly claimed optical properties (See Claims 14 and 20 which read on the limitations of instant claims 51 and 52). Liu et al. also discloses that delamination of the layers in the film should be avoided (first full paragraph, page 25). Liu et al. discloses a laminate with more than 100 layers which is bonded on both sides by PVB and then bonded on those both sides by glass (Example 2, Page 29-30 and Fig. 3). Liu et al. does not disclose the peripheral sealing of the multilayer film.

Neavin et al. discloses a method of continuously forming optical films, including multilayer birefringent films ([0021], Fig. 1, [0022]-[0024]). This production method would be obvious to use for the film of Liu in order to make production of the film more economical. Neavin does not disclose the cutting of the film to a final shape for a particular application but one having ordinary skill would appreciate this would be a necessary step in the process. Soodak et al. discloses a method of cutting shapes from a continuous sheet of plastic material with a laser in which the laser is configured to cut and weld the edges of the cut sheets in a way that allows the depth of the welded edge to be controlled (C4, L1-15 and C7, L60-C8, L5 and C11, L40-65, disclosing that the area of the defocused welding laser beam can be controlled to be as much as

0.5 inches). The use of the laser is known in the art to have advantages over other cutting techniques in that it can be configured to a variety of shapes by computer control (as opposed to die cutters can only cut one type of shape) (C3, L10-25). The welding aspect of the laser beam would also advantageously reduce delamination problems which were disclosed as an area of concern in Liu (first full paragraph, page 25). Hence it would have been obvious to have used the laser cutting welding technique of Soodak to cut the optical film produced by the more economical process of Neavin into the final desired shape.

Regarding claim 32, the laser cutting method of Soodak would only fuse the periphery and not the center portions of the film and would prevent delamination. Regarding claim 33, Liu et al. discloses a laminate with more than 100 layers which is bonded on both sides by PVB and then bonded on those both sides by glass (Example 2, Page 29-30 and Fig. 3). With respect to claim 34, Liu discloses that the PVB layers are laminated (i.e. fully bonded) to the microlayer stack (Fig. 3). Since the sheets are coextensive, the bonding of the optical film and the PVB layers is considered fully bonded. With respect to claim 35, the peripheral edges of all the layers in the glazing assembly are disclosed as being substantially coextensive (Fig. 3). With respect to claim 37 and 40, since the bonding PVB layers do not surround the exposed edge of the optical film (Fig. 3) the optical film is not fully encapsulated by the bonding layers. With respect to claims 39, 41, 42, the laser techniques of Soodak provide for fusing (intermingling) of the layers during the welding of their edges and Soodak discloses that the depth of this weld can be controlled to up to 0.5 inches (C11, L40-65). The remaining portions would not be so fused. With respect to claim 38, the glazing of modified Liu et al. would be suitable for a vehicle window.

10. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (WO 01/096104) in view of Neavin et al. (U.S. 2001/0013668) in view of Soodak et al. (U.S. 4,945,203) as applied to claim 33 above, and further in view of Gourio (U.S. 6,334,382).

Regarding claim 36, modified Liu et al. discloses all of the limitations as set forth above. Liu et al. does not disclose that the optical film extend beyond the peripheral edge of the bonding layers. Gourio discloses an optical laminate in which an optical layers (3 and 2) extends past the bonding layers (9) (Fig. 2). Gourio also discloses that bonding layer 9 can be made into two separate layers on either side of the optical layer (3 and 2) by reducing the gap between portion 3 and portion 2 (C3, L25-50). The extension of the layer (i.e. portion 3) is disclosed as improving impact resistance of the glass laminate (C2, L5-20).

The inventions of both modified Liu et al. and Gourio are drawn to the field of optical laminates and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the optical film layer dimensions of modified Liu et al. by extending the layer as taught by Gourio for the purposes of imparting improved impact resistance.

Response to Arguments

11. Applicant's arguments of 10/04/10 are considered moot in light of the new grounds of rejection provided above. Arguments which are still deemed relevant are addressed below.

12. First, the examiner would like to explain that the reason the previous rejection in view of Stefanik was withdrawn was because the definition of fuse was pointed out to be "to reduce to a

liquid or plastic state by heat” (Merriam Webster). Hence Stefaniks use of an adhesive to bind the layers did not read on this limitation and the term should be taken to be defined according to the definition above as per applicant’s arguments.

13. Second, the examiner notes that applicant’s arguments that intermingling is set forth in the specification as the result of the fusion of the layers is acknowledged and the 112 2nd paragraph rejection has been withdrawn.

14. Last, the examiner notes that the Soodak reference used in the current rejection has been used in previous rejections and applicant has made arguments that the Soodak reference is non-analogous art to the other prior art references. The examiner does not consider Soodak non-analogous art because, as explained above, it relates to a method of cutting films from a continuous roll and it is also analogous in that it prevents delamination.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Friday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Angela Ortiz can be reached on (571) 272-1206. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Angela Ortiz/
Supervisory Patent Examiner, Art Unit
1798

01/05/11
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